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FACSIMILE TRANSMISSION

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TO: U.S. Patent and Trademark Office
Examiner Thuy Dao

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FROM: Nathaniel T. Wallace
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MESSAGE:

RE: U.S. Patent Application Serial No.: 10/729,736
ALIGNMENT AND GENERALIZATION OF DEMONSTRATED PROCEDURE TRACES
Our Docket No.: YOR920030355US1 (8728-642)

Attached is a proposed amendment in connection with the above-identified application.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS:	Castelli	DOCKET: YOR920030355US1 (8728-642)
SERIAL NO:	10/729,736	GROUP ART UNIT: 2192
FILED:	December 5, 2003	EXAMINER: Dao, Thuy Chan
FOR:	**ALIGNMENT AND GENERALIZATION OF DEMONSTRATED PROCEDURE TRACES**	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PROPOSED AMENDMENT

Examiner:

Please consider the following proposed amendment.

AMENDMENTS TO THE CLAIMS

Please accept amended Claims 1 and 18 as follows.

Listing of claims:

1. (Currently Amended) A method for generating one or more computer-executable procedures, comprising the steps of:

recording at least one trace of at least one instance of a procedure, wherein the at least one trace comprises a plurality of steps;

performing an alignment and generalization of the plurality of steps, wherein the alignment identifies and aligns a set of steps within the at least one trace that are equivalent once generalized, wherein equivalence denotes that the set of steps perform a distinct action in the procedure;

determining a procedural model based on the alignment;

computing a set of possible alignments and generalizations based on the procedural model;

selecting an updated alignment and an updated generalization from the set of possible alignments and generalizations according to an alignment-generalization functional that determines a rate at which the steps of the procedure are correctly predicted for the set possible alignments and generalizations; and

generating the one or more computer-executable procedures consistent with the updated alignment and the updated generalization.

2-3. (Canceled)

4. (Previously Presented) The method of claim 1, wherein the alignment-generalization functional selects an alignment having a greatest number of correctly predicted steps according to a procedure model.

5. (Previously Presented) The method of claim 1, wherein the alignment-generalization functional selects a generalization having a greatest number of correctly generalized steps according to a procedure model.

6. (Previously Presented) The method of claim 1, wherein the alignment-generalization functional is a monotonically increasing function of an alignment functional and a generalization functional.

7. (Previously Presented) The method of claim 6, wherein the monotonically increasing function selects the alignment and the generalization from the set of possible alignments and generalizations that maximizes a linearly increasing function of the alignment functional and the generalization functional.

8. (Previously Presented) The method of claim 1, wherein the alignment-generalization functional is maximized using an optimization technique.

9. (Previously Presented) The method of claim 8, further comprising applying the optimization technique iteratively.

10. (Previously Presented) The method of claim 9, wherein the optimization technique is a gradient-descent technique.

11. (Original) The method of claim 1, wherein simultaneously performing an alignment and generalization of the at least one trace further comprises the steps of:

computing an initial alignment and generalization of the at least one trace;

generating a procedure model of the initial alignment; and

computing a best alignment and generalization of the procedure model.

12. (Original) The method of claim 11, further comprising the step of:

repeating the steps of determining the initial alignment, generating the procedure model, and determining the best alignment until a local optimum is detected.

13. (Original) The method of claim 11, wherein generating a procedure model of the initial alignment comprises generating a Hidden Markov Model of the initial alignment.

14. (Original) The method of claim 13, wherein generating a Hidden Markov Model of the initial alignment comprises generating an Input/Output Hidden Markov Model of the initial alignment.

15. (Original) The method of claim 1, wherein simultaneously performing an alignment and generalization of the at least one trace further comprises the steps of:

determining an initial alignment and generalization of the at least one trace;

generating a transition model and an action model of the initial alignment and

generalization; and

determining a best alignment of the transition model and the action model.

16. (Original) The method of claim 15, wherein further comprising the step of:

repeating the steps of determining the initial alignment, generating the transition model and the action model, and determining the best alignment until a convergence is detected.

17. (Original) The method of claim 15, wherein generating a transition model and an action model of the initial alignment and generalization comprises generating a transition model for at least one node and an action model for the at least one node.

18. (Currently Amended) A machine-readable medium having instructions stored thereon for execution by a processor to perform a method for generating one or more computer-executable procedures, comprising the steps of:

recording at least one trace of at least one instance of a procedure, wherein the at least one trace comprises a plurality of steps;

performing an alignment and generalization of the plurality of steps, wherein the alignment identifies and aligns a set of steps within the at least one trace that are equivalent once generalized, wherein equivalence denotes that the set of steps perform a distinct action in the procedure;

determining a procedural model based on the alignment;

computing a set of possible alignments and generalizations based on the procedural model;

selecting an updated alignment and a an updated generalization from the set of possible alignments and generalizations according to an alignment-generalization functional that determines a rate at which the steps of the procedure are correctly predicted for the set possible alignments and generalizations; and

generating the one or more computer-executable procedures consistent with the updated alignment and the updated generalization.

19-20. (Cancelled)